US012310327B2

(12) United States Patent
Woo et al.

(10) Patent No.: US 12,310,327 B2
(45) Date of Patent: May 27, 2025

(54) **ABSORBENT PET PAD**

(71) Applicant: **Sarah H Woo**, Flushing, NY (US)

(72) Inventors: **Sarah H Woo**, Flushing, NY (US); **Roberto Ammendola**, Los Angeles, CA (US)

(73) Assignee: **Sarah H. Woo**, Flushing, NY (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 407 days.

(21) Appl. No.: **17/745,035**

(22) Filed: **May 16, 2022**

(65) **Prior Publication Data**

US 2022/0272937 A1 Sep. 1, 2022

Related U.S. Application Data

(63) Continuation-in-part of application No. 17/183,243, filed on Feb. 23, 2021, now abandoned.

(51) **Int. Cl.**

A01K 1/01	(2006.01)
A01K 1/015	(2006.01)
B32B 3/30	(2006.01)

(52) **U.S. Cl.**

CPC ***A01K 1/0107*** (2013.01); ***A01K 1/0157*** (2013.01)

(58) **Field of Classification Search**

CPC .. A01K 1/0107; A01K 1/0157; A01K 1/0125; B32B 2471/04; B32B 3/30

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,154,052	A	10/1964	Sweeney	
3,233,502	A *	2/1966	Fernberg	F16B 21/086 411/500
3,684,155	A	8/1972	Smith	
4,014,292	A	3/1977	Coughlin et al.	
4,305,544	A	12/1981	Noonan	
4,441,451	A	4/1984	Neal	
4,501,226	A	2/1985	Bienvenu et al.	
4,646,685	A	3/1987	Arenz	
4,800,841	A	1/1989	Yananton et al.	
5,059,476	A	10/1991	Steiniger et al.	
5,390,628	A	2/1995	Vito	

(Continued)

OTHER PUBLICATIONS

Product literature: Wee-Wee Super Absorbent Pads with Insta-Rise Border. PDF from: https://www.fourpaws.com/all-products/waste-management-and-training/indoor/wee-wee-pads-with-insta-rise-border , retrieved Feb. 23, 2021.

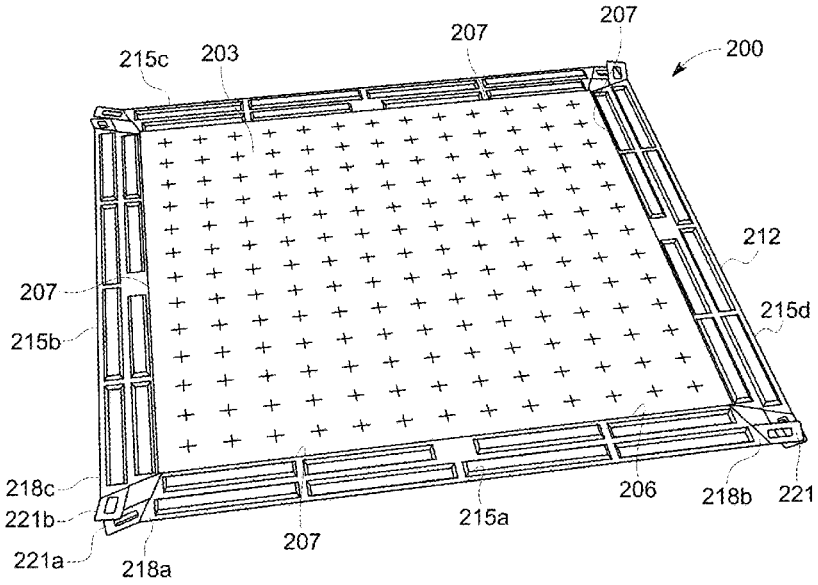
(Continued)

Primary Examiner — Joanna Pleszczynska
(74) *Attorney, Agent, or Firm* — Harness, Dickey & Pierce, P.L.C.

(57) **ABSTRACT**

Disclosed herein in is an absorbent pet pad having erectable edges that define a central region where pet waste in confined. An exemplary embodiment comprises a non-rigid absorbent central region surrounded by edge region. The edge region can be erected to an erected angle, forming a substantially vertical border surrounding the pad. The border serves to retain pet waste, and to urge a pet, instinctively, to locate itself entirely on the pad when expelling waste. The erected angle forming the border may be established and maintained with edge attachment features. The erected edge region may be especially rigid owing to a folded A-shaped cross section.

16 Claims, 8 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

5,394,834	A	3/1995	Queen et al.	
5,579,722	A	12/1996	Yamamoto et al.	
5,797,347	A	8/1998	Ochi	
5,832,869	A	11/1998	Franczak	
8,697,202	B2 *	4/2014	Levkovitch	A01K 1/0125 428/12
8,960,127	B2	2/2015	Miller	
2002/0002954	A1	1/2002	Goitiandia et al.	
2005/0109284	A1	5/2005	Helfman	
2010/0300367	A1	12/2010	Askinasi	
2012/0234253	A1	9/2012	Malm et al.	
2014/0261208	A1	9/2014	Calimano et al.	
2017/0305596	A1 *	10/2017	Dag	B65D 5/0015

OTHER PUBLICATIONS

Product literature: Wee-Wee Washable Dog Pee Pad. PDF from: https://www.fourpaws.com/all-products/waste-management-and-training/indoor/wee-wee-pads/wee-wee-washables , retrieved Feb. 23, 2021.

Office Action from parent U.S. Appl. No. 17/183,243 dated May 18, 2021.

Office Action from parent U.S. Appl. No. 17/183,243 dated Aug. 25, 2021.

Office Action from parent U.S. Appl. No. 17/183,243 dated Mar. 10, 2022.

* cited by examiner

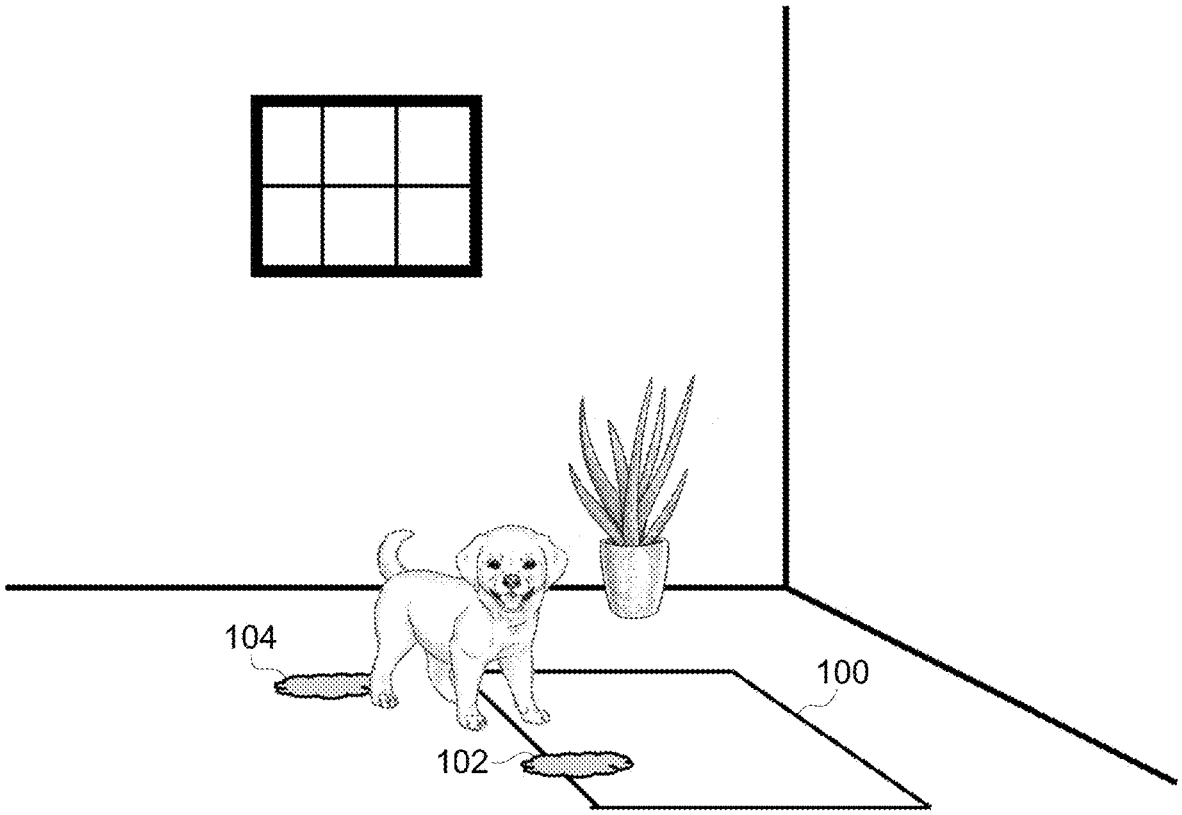


FIG. 1
PRIOR ART

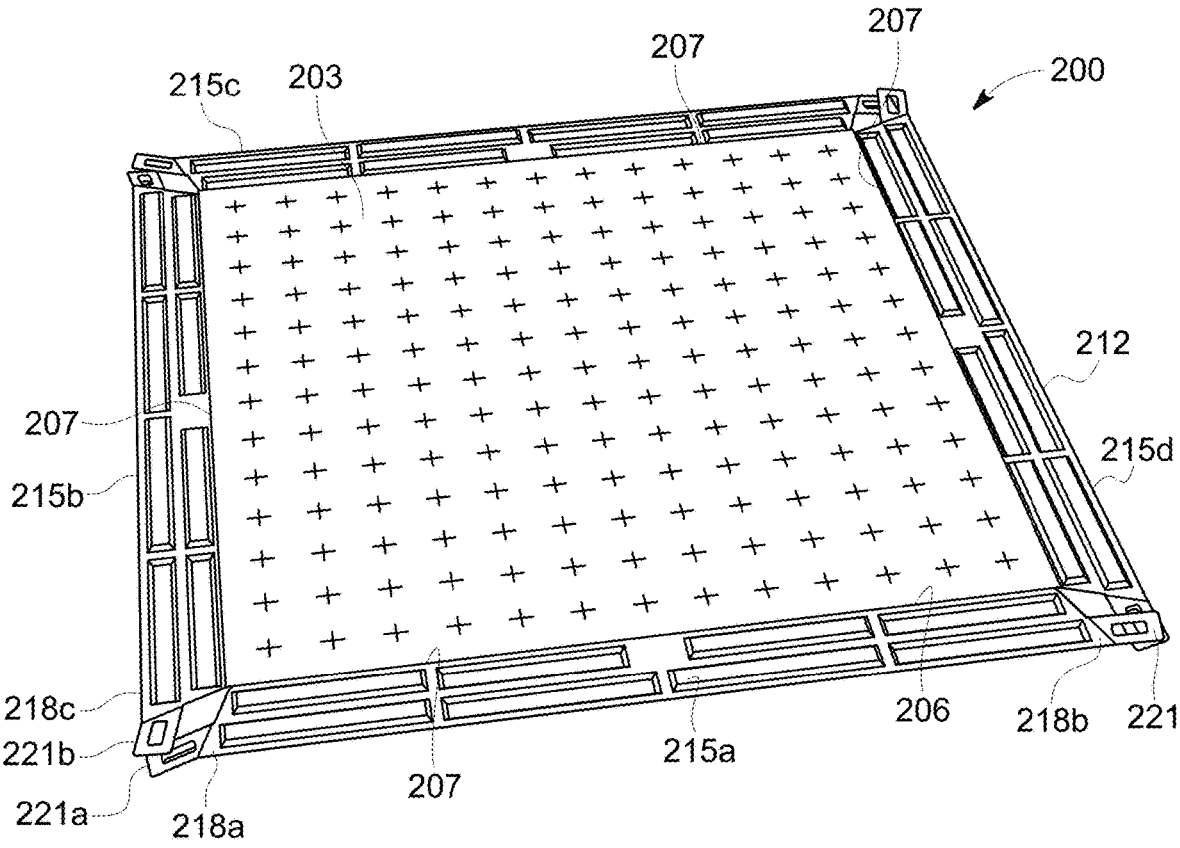

207
207
200
215c
203
212
207
215d
215b
218c
221b
221a
218a
207
215a
206
218b
221

FIG. 2

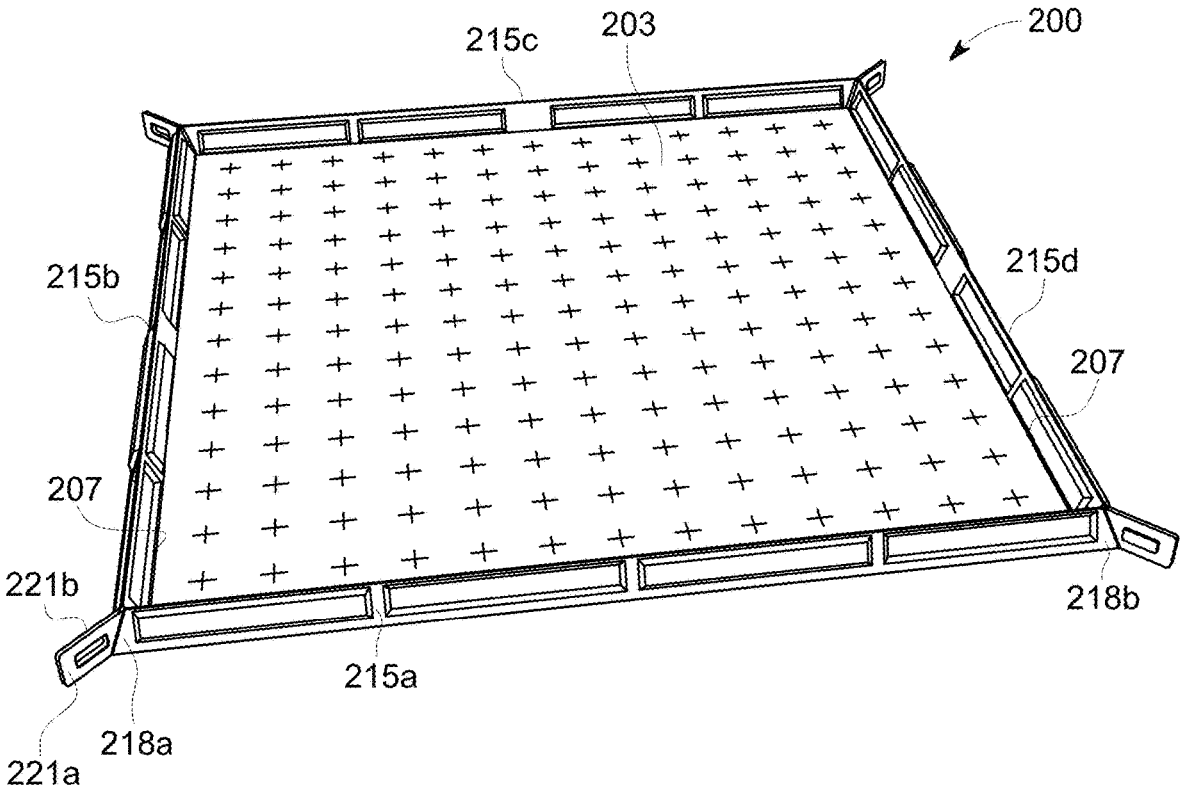


FIG. 3

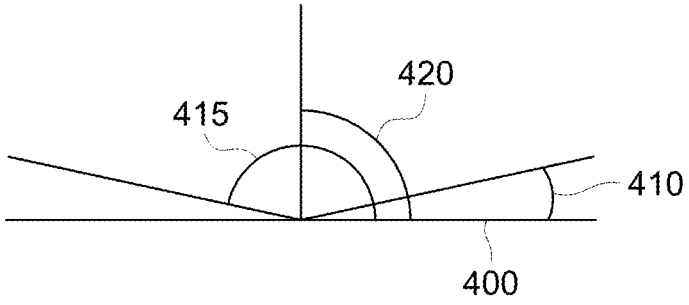


FIG. 4

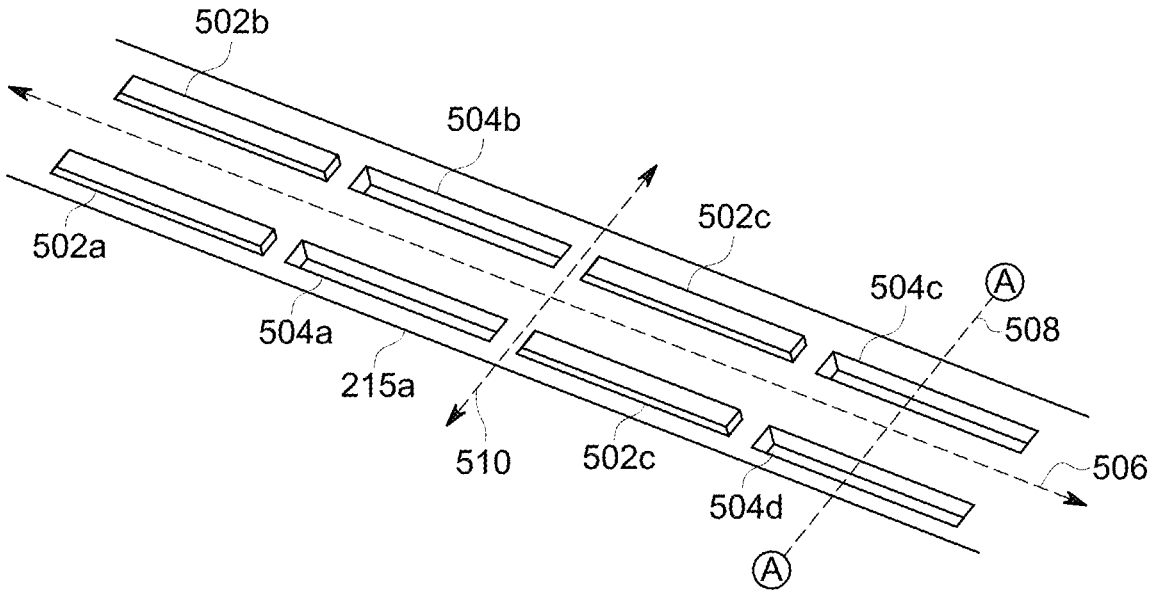

502b
504b
502a
502c
504c
A
508
504a
215a
510
502c
506
504d
A

FIG. 5

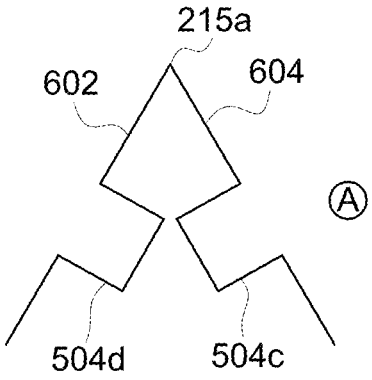

215a
602
604
A
504d
504c

FIG. 6

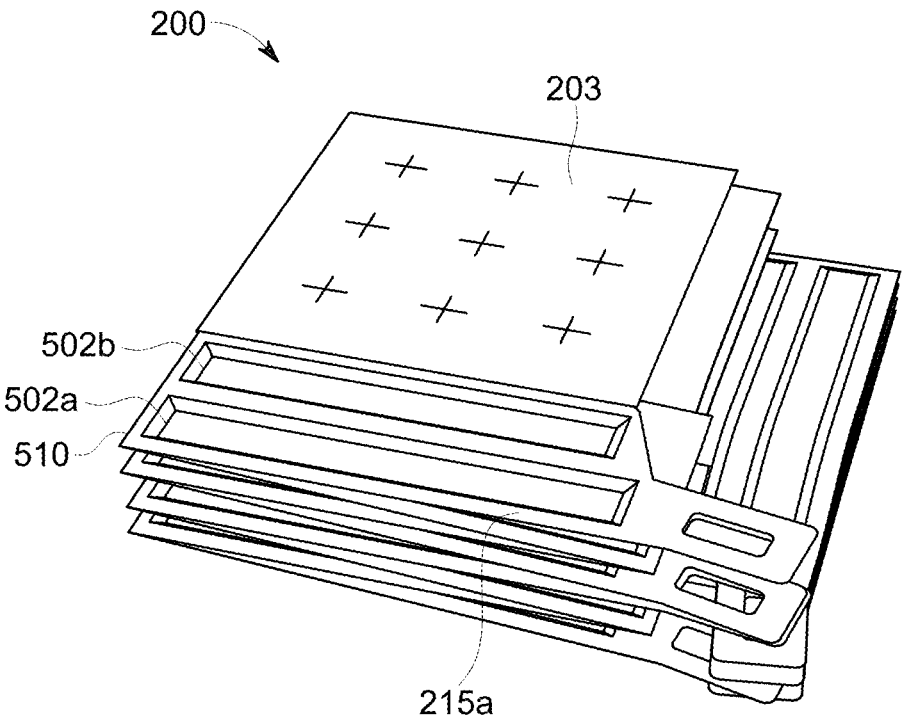


FIG. 7

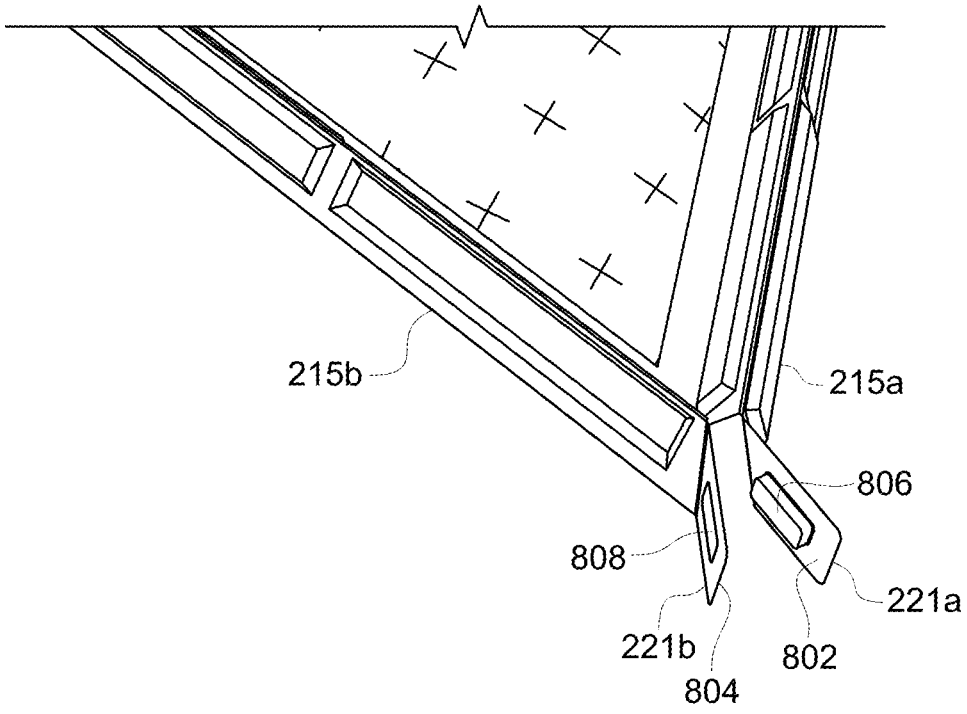


FIG. 8

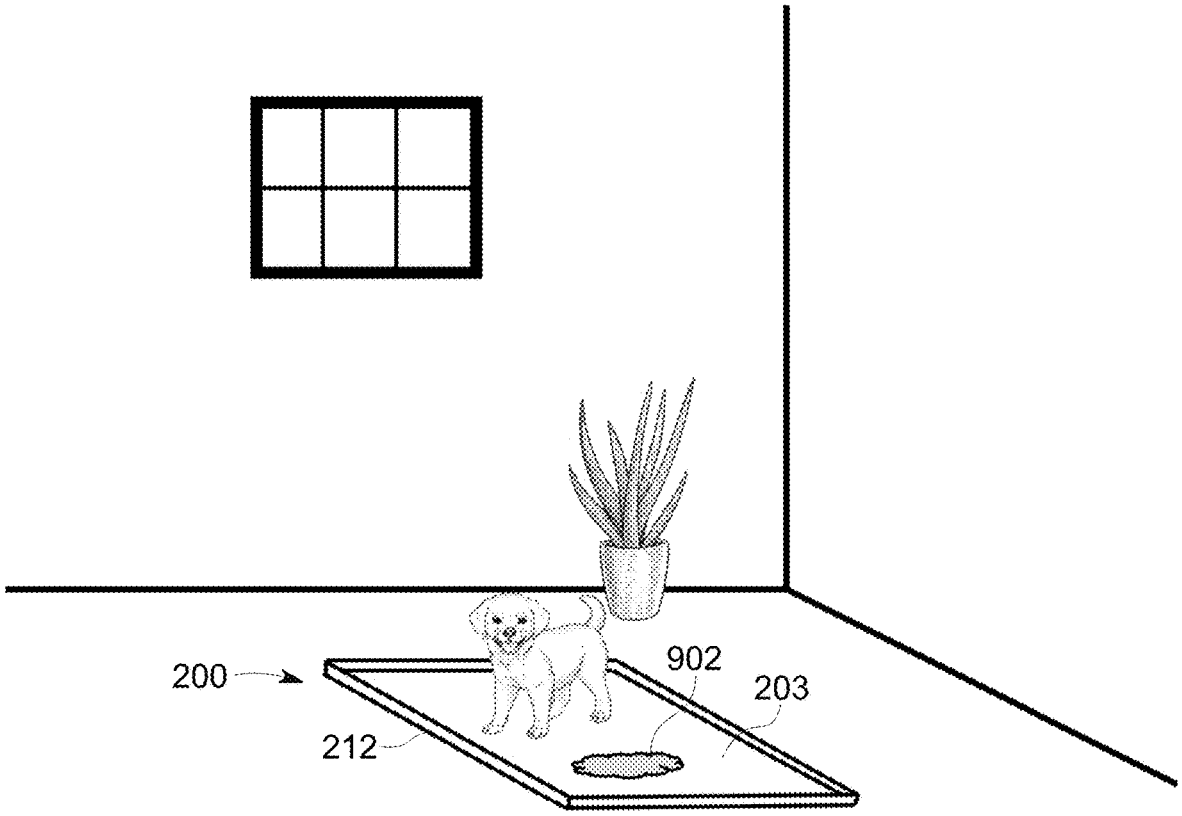


FIG. 9

ABSORBENT PET PAD

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation in part of and claims priority to and the benefit of U.S. patent application Ser. No. 17/183,243 filed on Feb. 23, 2021 and entitled ABSORBENT PET PAD, the contents of which are expressly incorporated herein by reference.

FIELD

The present invention relates to pet waste management pads. More particularly, the present invention relates to absorbent pet pads used to confine pet waste to the surface of the pad.

BACKGROUND

Traditional pet waste management pads may be used in the household, and other environments where it is desirable to confine the pet waste to the surface of the pad. The pet is urged and trained to use the pad when producing waste. The pads can comprise absorbent material suited to absorb the liquid elements of the pet waste.

Although washable pet waste management pads are available, the most significant commercial demand for pet pads is specifically for disposable pet pads. Disposable pet pads are particularly convenient and sanitary because they are disposed of once they become saturated with pet waste.

Conventional disposable pet pads comprise a flat, non-rigid absorbent material that is foldable and rollable so as to be convenient for storage, for packaging for distribution and sale, and for disposal. Referring to prior art FIG. **1**, conventional pet pad **100** is shown deployed in a typical household environment. It will be noted that pet pad **100** is flat across its entire area, owing to the desire that it consist of a flat, non-rigid conveniently storable, packageable and disposable article. This characteristic, however, leads to significant shortcomings. In particular, since the pet pad is entirely flat, pet waste **102** tends to leak off of the area of the pet pad and onto the adjacent household floor. In addition, it is recognized that pets are inclined to position themselves in a confined space while producing waste, when such a space is presented. But because the conventional pet pad is entirely flat with no recognizable three-dimensional border, the pet will not be instinctively urged to position itself on the pad. Instead, the pet may, for example, place its front legs on the pad while waste **104** is produced entirely off the surface of the pad.

What is desirable is a pet pad and method for using a pet pad that has all the advantages of the conventional, easily stored, packaged, and disposed-of pad, and also solves the shortcomings described. Moreover, a pet pad with erectable edge sections that are particularly rigid and sturdy, and configured to be compact when packaged for shipping and storage, is especially desired.

SUMMARY

An exemplary embodiment of the present invention comprises a non-rigid central region comprising an absorbent material. The central region is disposed in a first horizontal plane.

In this exemplary embodiment, an edge region is disposed in the first horizontal plane extending laterally away from the central region. The edge region comprises a plurality of edge sections. The plurality of edge sections are configured to fold away from the first horizontal plane forming an erected angle between 15 degrees and 165 degrees with the first horizontal plane.

In this exemplary embodiment at least one of the edge sections comprises an edge section length and is foldable along the edge section length establishing a double layer edge section when erected.

In another exemplary embodiment, the double layer edge section may have an A-shaped cross section, enhancing rigidity of the edge section when erected.

In another exemplary embodiment the edge sections may comprise protrusions extending perpendicularly upward and downward relative to the horizontal plane. The protrusions add to the rigidity of the double layer edge section when erected. Two protrusions which extend downward may also make contact when the edge section is folded facilitating an A-shaped double layer edge section cross section.

In certain embodiments the edge region may comprise a molded pulp material or similar paper or fiber derivative material which allows for the formation of three-dimensional features and/or hollow protrusions in the surface.

In certain embodiments edge sections may comprise edge attachment features, wherein at least one of the edge attachment features comprises a first tab comprising a first attachment protrusion and an opposing edge attachment feature comprises a second tab comprising an opening shaped to substantially fixedly receive the first attachment protrusion.

In another exemplary embodiment edge sections may comprise alternating waffle shaped protrusions such that, when the pet pad is folded for packaging and shipment the waffle shaped protrusions nest into one another.

BRIEF DESCRIPTION OF DRAWINGS

These and other features, aspects, and advantages of the present invention will become better understood with regard to the following descriptions, claims, and accompanying drawings. It is to be noted, however, that the drawings illustrate only several embodiments of the invention and are therefore not to be considered limiting of the invention's scope as it can admit to other equally effective embodiments.

FIG. **1** illustrates a prior art pet pad.

FIG. **2** is a perspective view of an exemplary pet pad consistent with the present invention.

FIG. **3** is a perspective view of an exemplary pet pad with erected edge sections consistent with the present invention.

FIG. **4** illustrates the erected angles of exemplary versions of the inventive pet pad.

FIG. **5** illustrates detail of an exemplary pet pad edge section consistent with the present invention.

FIG. **6** is a cross section of an exemplary pet pad edge section consistent with the present invention.

FIG. **7** illustrates an exemplary pet pad folded for packaging, shipping, and storage consistent with the present invention.

FIG. **8** illustrates detail of edge section edge attachment features consistent with the present invention.

FIG. **9** illustrates an exemplary version of the inventive pet pad deployed in an exemplary use environment.

DETAILED DESCRIPTION

So that the manner in which the features and advantages of embodiments of methods and systems of the present invention may be understood in more detail, a more par-

ticular description of the present invention briefly summarized above may be had by reference to certain embodiments thereof that are illustrated in the appended drawings, which form a part of this specification. The drawings illustrate only certain embodiments of the present invention and are, therefore, not to be considered limiting of the scope of the present invention which includes other useful and effective embodiments as well.

An exemplary version of the present invention comprises a non-rigid or largely non-rigid flat pad comprising an edge region that can be erected to an erected angle so as to provide standing edges surrounding an absorbent central region. This exemplary embodiment may be stored, packaged for distribution and sale, and disposed of, as a non-rigid or largely non-rigid flat article. And when the pad is deployed, its edges can be erected to support retaining pet waste on the pad, and to provide a three-dimensional border motivating a pet to situate itself entirely on the pad when producing waste.

Various elements of various desirable embodiments of the inventive pet pad may comprise materials of differing rigidity. For the purposes of the present detailed description of the various embodiments of the inventive pet pad, the term non-rigid should be understood to mean a material, that when folded, does not significantly deform in a manner that retains the folded shape. Examples of a non-rigid materials include cotton cloth such as that used for bedsheets, and the sheet material that comprises the disposable pet pad sold under the brand name Wee-Wee® pad. The term semi-rigid should be understood to mean a material that does not significantly resist deformation when folded and tends to retain the folded shape. Examples of semi-rigid materials include thin mil cardboard used for cereal boxes, and thick mil paper used for brown paper grocery bags.

Turning to the figures, FIG. **2** is a perspective view of an exemplary version of the inventive pet pad. Pad **200** comprises a non-rigid central region **203**. In this exemplary version, central region **203** comprises non-rigid liquid-absorbing absorbent material. Central region **203** comprises perimeter **206** which surrounds the lateral extent of central region **203**. Perimeter **206** generally defines a fold line **207** which is substantially where edges will be folded up to an erected angle, as described in more detail below.

In this exemplary embodiment an edge region **212** extends entirely around central region **203**, including all four sides in the exemplary version illustrated. Edge region **212** comprises four edge sections **215***a*, **215***b*, **215***c*, and **215***d*. Each edge section **215***a-d* comprises two edge ends, such as edge ends **218***a* and **218***b* with respect to edge section **215***a*.

Edge attachment features are disposed at the edge ends, as illustrated by edge attachment feature **221***a* extending from edge end **218***a* and edge attachment feature **221***b* extending from edge end **218***c*. The configuration and function of the edge attachment features are described in more detail below with reference to FIG. **8**.

Turning to FIG. **3**, FIG. **3** is a perspective view of an exemplary embodiment of the pet pad **200** consistent with the present invention illustrating the edge sections **215***a-d* each erected at fold line **207**. In the illustrated embodiment, as described in more detail below with reference to FIGS. **5** and **6**, each edge section is folded when erected forming a rigid double layer wall. In the illustrated embodiment, as described in more detail below with reference to FIG. **8**, the erected state of edge sections **215***a-d* is maintained by coupling opposing edge attachment features, for example edge attachment features **221***a* and **221***b*.

Turning to FIG. **4**, FIG. **4** illustrates the erected angles of exemplary versions of the inventive pet pad. Pet pad **200** (FIG. **2**) lies substantially in horizontal plane **400**. In the exemplary version, when edge sections **215***a-d* of edge region **212** (FIG. **2**) are folded upward to establish a lifted border surrounding pad **200**, they may each be folded to an angle between and including 15 degrees, angle **410**, and 165 degrees, angle **415**. The folded angle may be referred to as the erected angle. The erected angle, in the illustrated version, is preferably substantially 90 degrees, angle **420**.

Turning to FIG. **5**, FIG. **5** is a perspective detailed view of edge section **215***a*. In the exemplary embodiment shown, edge section **215***a* may comprise a molded pulp material (or similar paper or fiber derivative material which allows for the formation of three-dimensional features and/or hollow protrusions in the surface) which can be pressed to create three-dimensional surface features. In the illustrated embodiment, rectangular hollow "waffle-shaped" protrusions **502***a*, **502***b*, **502***c* and **502***d* are formed extending upwardly in a direction perpendicular to horizontal plane **400** (FIG. **4**). Additionally, rectangular hollow waffle-shaped protrusions **504***a*, **504***b*, **504***c* and **504***d* are formed extending downwardly in the opposite direction perpendicular to horizontal plane **400**.

Dotted arrow **506** in FIG. **5** denotes the central line edge section length of edge section **215***a*. In the exemplary embodiment edge section **215***a* is folded along edge section length **506** to configure edge section **215***a* into its erected state, the state shown in FIG. **3**.

Dotted line **508** marked (A)-(A) shown in FIG. **5** identifies the cross section further illustrated in FIG. **6**. Turning to FIG. **6**, FIG. **6** is a cross section of erected edge section **215***a* taken at dotted line **508** shown in FIG. **5**. FIG. **6** illustrates, with respect to this exemplary embodiment, that folding edge section **215***a* along edge section length **508** (FIG. **5**) establishes a double layer edge section comprised of a first layer **602** and a second layer **604**. This double layer configuration supports substantial rigidity of the erected edge sections. Furthermore, in the illustrated embodiment, in this folded state protrusions **504***d* and **504***c* contact one another establishing the A-shaped of the cross section which further enhances the rigidity of erected edge section **215***a*.

Returning to FIG. **5**, dotted arrow **510** denotes a short direction fold line at which edge section **215***a* may be folded for packaging and shipping. More specifically, referring to FIG. **7**, FIG. **7** illustrates and exemplary folded configuration wherein pet pad **200** is folded into quarters for efficient packaging, shipping and storage. The folding into quarters involves folding each edge section at a short direction fold line such as fold line **510** with respect to edge section **215***a*. Significantly, when folded the waffle shaped hollow protrusions including protrusions **502***a-d* and **504***a-d* nest within one another, one protrusion receiving a corresponding protrusion. This reduces the volume of ped pad **200** when folded for shipping and storage, and also preserves the shape of the protrusions when packaged for shipping and storage. For example, returning to FIG. **5**, it will be appreciated that when edge section **215***a* is folded along line **510**, protrusion **502***a* nests inside protrusion **504***d*, and similarly protrusion pairs **502***d*/**504***a*, **502***b*/**504***c* and **502***c*/**504***b* nest as well.

An additional inventive aspect of certain embodiments of the present invention is illustrated in FIG. **8**. FIG. **8** is a perspective detailed view illustrating the configuration and function of edge attachment features **221***a* and **221***b*. As previously discussed, edge attachment features **221***a* and **221***b* couple to maintain the erected state of the edge sections. More specifically, edge attachment features **221***a*

and **221***b* comprise tabs **802** and **804**, respectively. In the illustrated embodiment, edge sections **215***a* and **215***b*, including tabs **802** and **804** may comprise molded pulp material (or similar paper or fiber derivative material which allows for the formation of three-dimensional features and/or hollow protrusions in the surface) in which three-dimensional features may be pressed. In the illustrated embodiment, protrusion **806** is formed in tab **802**. Opposing tab **804** of edge attachment feature **221***b* comprises an opening **808** shaped to substantially fixedly receive protrusion **806**. More specifically, in the exemplary embodiment opening **808** is slightly smaller in dimensions than the outside dimensions of protrusion **806**. Consequently, when protrusion **806** is pushed through opening **808** it tends to stay in place in a press-fit fashion. This coupling of opposing end attachment features maintains the edge sections in their erected state.

Turning to FIG. **9**, FIG. **9** illustrates an exemplary version of the inventive pet pad deployed in an exemplary use environment. More specifically, FIG. **9** illustrates edge region **212** in its erected angle position, forming a substantially vertical border surrounding pad **203**. Thus, an innovated pet pad is provided that may be packaged, shipped and stored as a compact article. And when the pad is deployed, its edges can be erected in an especially rigid configuration to support retaining pet waste **902** on the pad, and to provide a three-dimensional border attracting a pet to situate itself entirely on the pad when producing waste.

The foregoing description of exemplary embodiments of the invention has been presented for the purpose of illustration; it is not intended to be exhaustive or to limit the invention to the precise forms disclosed. The description and drawings are, accordingly, to be regarded in an illustrative rather than a restrictive sense. The language used in the specification has been principally selected for readability and instructional purposes. It is therefore intended that the scope of the invention be limited not by this detailed description and drawings, but rather by any claims that issue based on this disclosure. It will be evident that various modifications and changes may be made thereto without departing from the broader spirit and scope of the invention as set forth in the claims.

What is claimed is:

1. A pet pad comprising:

a non-rigid central region comprising an absorbent material, the central region disposed in a first horizontal plane;

an edge region substantially disposed in the first horizontal plane, extending laterally away from the central region, the edge region comprising a plurality of edge sections, the plurality of edge sections configured to fold away from the first horizontal plane forming an erected angle between 15 degrees and 165 degrees with the first horizontal plane; and

at least one of the edge sections comprising an edge section length and configured to be folded along the edge section length to establish a double layer edge section when erected,

wherein the at least one of the edge sections comprises a short fold line that is perpendicular to the edge section length in the first horizontal plane, a first edge section protrusion protruding upward perpendicular to the first horizontal plane and a second edge section protrusion protruding downward perpendicular to the first horizontal plane, and the first edge section protrusion and the second edge section protrusion are configured to be coupled to each other when the at least one of the edge sections is folded along the short fold line.

2. The pet pad of claim **1**, the double layer edge section having an A-shaped cross section.

3. The pet pad of claim **1**, wherein the plurality of edge sections comprise molded pulp material.

4. The pet pad of claim **1**, wherein the double layer edge section has an A-shaped cross section, and the at least one of the edge sections further comprises a third edge section protrusion protruding downward with regard to the first horizontal plane such that when folded into the A-shaped cross section, the second edge section protrusion and the third edge section protrusion come into contact thereby facilitating maintaining the A-shaped cross section.

5. The pet pad of claim **1**, each of the edge sections comprising an edge attachment feature and wherein at least one of the edge attachment features comprises a first tab comprising a first attachment protrusion and an opposing edge attachment feature comprises a second tab comprising an opening shaped to substantially fixedly receive the first attachment protrusion.

6. The pet pad of claim **5**, wherein the first tab comprises molded pulp material and the first attachment protrusion comprises a hollow shape formed in the molded pulp material.

7. The pet pad of claim **1**, wherein a first one of the edge sections comprises a first protrusion having a hollow shape, the first protrusion extending in a first direction perpendicular to the first horizontal plane, the first one of the edge sections further comprising a second protrusion extending in a second direction opposite the first direction, and wherein the first one of the edge sections is configured to fold and when folded the hollow shape of the first protrusion receives the second protrusion.

8. A pet pad comprising:

a non-rigid central region comprising an absorbent material, the central region disposed in a first horizontal plane;

an edge region substantially disposed in the first horizontal plane extending laterally away from the central region, the edge region comprising a plurality of edge sections, the plurality of edge sections configured to fold away from the first horizontal plane forming an erected angle between 15 degrees and 165 degrees with the first horizonal plane, each of the edge sections comprising a section end attachment feature; and

at least one of the edge sections comprising an edge section length, the at least one of the edge sections configured to be folded along the edge section length to establish a double layer edge section when erected, the double layer edge section being maintained as a double layer by coupling of opposing section end attachment features,

wherein the at least one of the edge sections comprises a short fold line that is perpendicular to the edge section length in the first horizontal plane, a first edge section protrusion protruding upward perpendicular to the first horizontal plane and a second edge section protrusion protruding downward perpendicular to the first horizontal plane, and the first edge section protrusion and the second edge section protrusion are configured to be coupled to each other when the at least one of the edge sections is folded along the short fold line.

9. The pet pad of claim **8**, wherein the double layer edge section has an A-shaped cross section.

10. The pet pad of claim **8**, wherein the plurality of edge sections comprise molded pulp material.

11. The pet pad of claim **8**, wherein the double layer edge section having an A-shaped cross section, and the at least

one of the edge sections further comprises a third edge section protrusion protruding downward with regard to the first horizontal plane such that when folded into the A-shaped cross section, the second edge section protrusion and the third edge section protrusion come into contact thereby facilitating maintaining the A-shaped cross section.

12. The pet pad of claim **8**, wherein the opposing section end attachment features comprises a first tab comprising a first attachment protrusion and a second tab comprising an opening configured to receive the first attachment protrusion.

13. The pet pad of claim **12**, wherein the first tab comprises molded pulp material and the first attachment protrusion comprises a hollow shape defined in the molded pulp material.

14. The pet pad of claim **8**, wherein a first one of the edge sections comprises a first protrusion having a hollow shape, the first protrusion extending in a first direction perpendicular to the first horizontal plane, the first one of the edge sections further comprising a second protrusion extending in a second direction opposite the first direction, and wherein the first one of the edge sections is configured to fold and when folded the hollow shape of the first protrusion is configured to receive the second protrusion.

15. A pet pad comprising:

a non-rigid central region comprising an absorbent material, the central region disposed in a first horizontal plane;

an edge region substantially disposed in the first horizontal plane, the edge region extending laterally away from the central region, the edge region comprising a plurality of edge sections, the plurality of edge sections configured to fold away from the first horizontal plane forming an erected angle between 15 degrees and 165 degrees with the first horizonal plane, each of the edge sections comprising a section end attachment feature; and

wherein a first one of the section end attachment features comprises a first tab comprising a first attachment protrusion and a second one of the section end attachment features comprises a second tab, the second tab comprising an opening shaped to substantially fixedly receive the first attachment protrusion,

wherein at least one of the edge sections comprises an edge section length and is foldable along the edge section length to establish a double layer edge section when erected, and

wherein the double layer edge section has an A-shaped cross section, and the at least one of the edge sections further comprises a first edge section protrusion protruding downward perpendicular to the first horizontal plane and a second edge section protrusion protruding downward perpendicular to the first horizontal plane such that the first edge section protrusion and the second edge section protrusion come into contact when the at least one of the edge sections is folded, thereby facilitating maintaining the A-shaped cross section.

16. The pet pad of claim **15**, wherein the first tab comprises molded pulp material and the first attachment protrusion comprises a hollow shape defined in the molded pulp material.

* * * * *